

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Rene A. Pereyra on 9/24/08.

The application has been amended as follows:

Listing of Claims:

1. (Previously Presented) A method for transmitting Internet Key Exchange (IKE) data packets across a network comprising the steps of:
receiving a vendor identification value from a receiving node;
in response to receiving the vendor identification value, using the vendor identification value to determine that the receiving node is IKE fragmentation capable;
generating and transmitting an IKE packet to the receiving node over a network, the IKE packet having an original IKE header;
determining whether a response to the IKE packet was received within a predetermined time interval;
determining a maximum transmission unit size for the network;
fragmenting the IKE packet into a plurality of smaller packets that do not exceed the maximum transmission unit size, wherein each of the smaller packets includes a

1 header formatted according to the IKE protocol; and

2 transmitting each of the plurality of smaller packets over a network.

3 2. (Previously Presented) The method of claim 1 wherein each of the
4 smaller packets includes a header formatted according to the IKE protocol and each of
5 the headers formatted according to the IKE protocol includes an identifier that may be
6 used to associate the smaller packet with the IKE packet.

7 3. (Currently Amended) A network node that communicates with other
8 network nodes according to the Internet Key Exchange (IKE) protocol, the network node
9 comprising:

10 a network interface card for interfacing with a network;

11 a User Datagram Protocol (UDP) stack that is capable of generating UDP data
12 packets for transmission over a network;

13 an IKE protocol stack that generates IKE data packets that are subsequently
14 processed by the UDP protocol stack; and

15 a fragmenter module that:

16 receives a vendor identification value from a network node and in

17 response to receiving the vendor identification value uses the vendor

18 identification value to determine that the network node is IKE

19 fragmentation capable;

20 intercepts IKE data packets prior to being processed by the UDP protocol stack
21 and splits the IKE data packets into a plurality of smaller data packets that may be
22 subsequently formatted by the UDP protocol stack, wherein each of the plurality of

smaller data packets includes a header formatted according to the IKE protocol and state information for network address translator processing, wherein the fragmenter module does not split the IKE data packets when a response to a previously-sent IKE data packet has been successfully received within a predetermined time interval.

4-10. (Canceled)

11. (Currently Amended) A system for transmitting Internet Key Exchange (IKE) protocol data packets across a network, the system comprising:

means for generating an IKE packet;

means for storing said IKE packet;

means for initializing, operating, and monitoring a timer;

means for detecting whether the IKE packet was successfully received at an intended receiver node before the expiration of the timer;

means for receiving a vendor identification value from the receiver node and using the vendor identification value to determine that the receiver node is IKE fragmentation capable;

means for fragmenting the IKE packet into smaller packets when the IKE packet was not successfully received at the receiver node;

means for adding a separate IKE fragment header to each of the smaller packets;

means for adding state information to each of the smaller packets for network address translator processing;

means for adding a separate User Datagram Protocol header to each of the

1 plurality of smaller packets; and

2 means for transmitting each of the plurality of smaller packets over [[a]] the
3 network.

4 12. (Original) The system of claim 11 further comprising means for
5 determining the capability of the receiver node for receiving fragmented packets.

6 13. (Previously Presented) A method for transmitting data packets across
7 a network comprising the steps of:

8 generating and transmitting an Internet Key Exchange (IKE) packet over a
9 network to a receiving node, the IKE packet having an original IKE header;

10 fragmenting of the IKE packet by an IP protocol layer;

11 determining whether a response to the IKE packet was received within a
12 predetermined time interval;

13 using a vendor identification value received from the receiving node to determine
14 whether the receiving node is capable of processing IKE fragments;

15 fragmenting the IKE packet into a plurality of smaller IKE packets to avoid the
16 fragmenting of the IKE packet by the IP protocol layer;

17 adding a separate IKE fragment header to each of the plurality of smaller IKE
18 packets, wherein one of the plurality of smaller IKE packets includes the original IKE
19 header;

20 adding state information to each of the plurality of smaller IKE packets for
21 network address translator processing;

22 adding a separate User Datagram Protocol header to each of the plurality of
23 smaller IKE packets; and

24 transmitting each of the plurality of smaller IKE packets over a network.

1 14-15. (Canceled)

2 16. (Previously Presented) The method of claim 13 wherein the plurality of
3 smaller packets contain the same information as that contained within the original IKE
4 packet.

5 17. (Canceled)

6 18. (Previously Presented) A method for transmitting data packets across
7 a network comprising the steps of:

8 receiving a vendor identification value from a receiver node;
9 in response to receiving the vendor identification value, using the vendor
10 identification value to determine that the receiver node is IKE fragmentation is-capable;

11 generating a data packet containing Internet Key Exchange (IKE) information the
12 data packet having an original IKE header;

13 initializing a timer;

14 determining, based at least in part on the expiration of the timer, whether
15 fragmentation of the data packet is necessary to successfully transmit the IKE
16 information to the receiver over a network;

17 fragmenting the data packet if necessary into a plurality of smaller packets that
18 may be transmitted over a network;

19 adding a separate IKE fragment header to each of the plurality of smaller
20 packets, wherein one of the plurality of smaller packets includes the original IKE header;

21 adding state information to each of the plurality of smaller packets for network
22 address translator processing;

23 adding a separate User Datagram Protocol header to each of the plurality of
24 smaller packets; and

transmitting each of the plurality of smaller packets over a network.

19-23. (Canceled)

The following is an examiner's statement of reasons for allowance:

The prior art (e.g. Kent, Thread Topic, Jinmei) enables the performing of IKE packet fragmentation within upper level network protocol layers, such as within the application layer. Furthermore, the prior art enables the application of well known packet fragmentation techniques, such as methods for MTU discovery and for determining when packet fragmentation is necessary. However, it does not appear that the prior art enables the claimed features, such as *receiving a vendor identification value from a receiving node and in response to receiving the vendor identification value, using the vendor identification value to determine that the receiving node is IKE fragmentation capable*, as they are found recited in combination within the claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEFFERY WILLIAMS whose telephone number is (571)272-7965. The examiner can normally be reached on 8:30-5:00.

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1 If attempts to reach the examiner by telephone are unsuccessful, the examiner's
2 supervisor, Emmanuel Moise can be reached on (571) 272-3865. The fax phone
3 number for the organization where this application or proceeding is assigned is 571-
4 273-8300.

5 Information regarding the status of an application may be obtained from the
6 Patent Application Information Retrieval (PAIR) system. Status information for
7 published applications may be obtained from either Private PAIR or Public PAIR.
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9 For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should
10 you have questions on access to the Private PAIR system, contact the Electronic
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12 USPTO Customer Service Representative or access to the automated information
13 system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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